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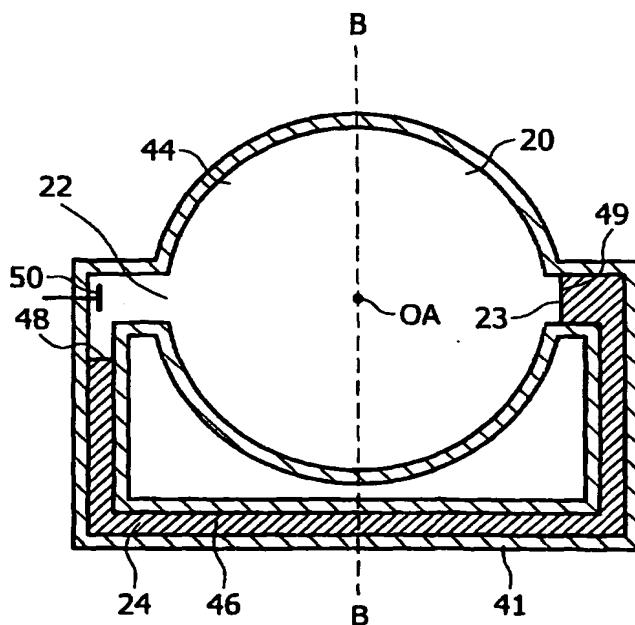
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(54) Title: ZOOM OPTICAL SYSTEM



(57) Abstract: A zoom optical system is provided which has a lens system which comprises a first lens which is arranged to provide a continuously variable focus for a beam of radiation. The lens system further comprises a switchable optical element including a first fluid, a second fluid and a waveform modifier having a part through which said radiation beam is arranged to pass. In a first mode the switchable optical element has a first fluid configuration with said part being substantially covered by the first fluid, and in a second mode the switchable optical element has a second, different, fluid configuration with said part being substantially covered by the second fluid.



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